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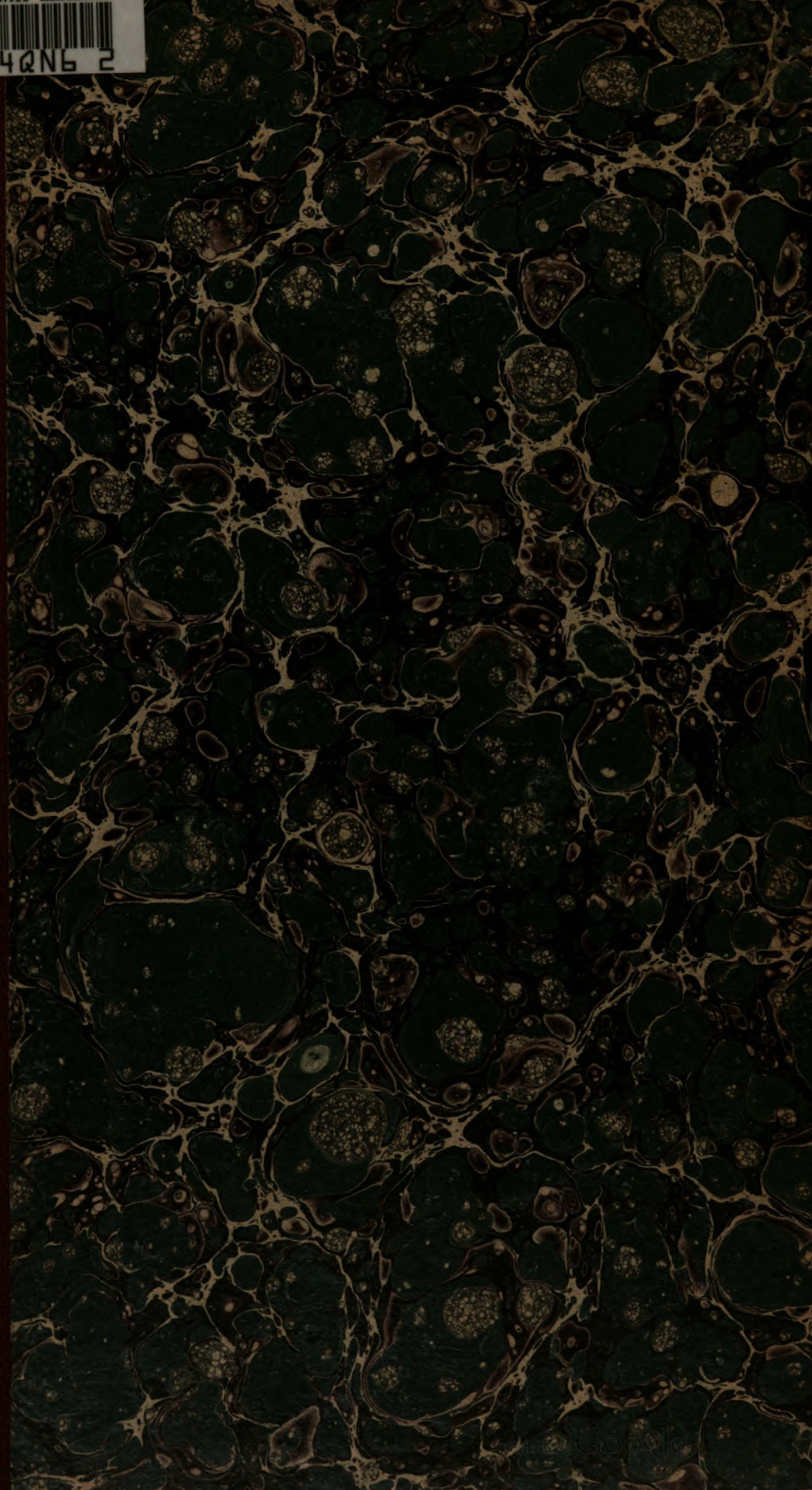
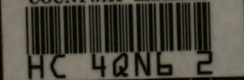
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COMBINED METHOD

OF

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CATARACT EXTRACTION.

BY

for HENRY R. SWANZY.

Nov 25/93

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Dr. B. J. ... 3806.153
15, 1899 -
On the combined method of cataract extraction.

By HENRY R. SWANZY.

IN this communication I desire to advocate the combined method for the extraction of cataract, and to report on 100 consecutive operations for uncomplicated senile cataract by that method.

For some years past ophthalmological journals, societies, and international meetings have teemed with papers in praise of the simple method of extraction, while anything in favour of the combined method has rarely been heard. So much so is this the case, that, I believe, if one's knowledge of ophthalmic work were derived from journals and the reports of societies alone, it might almost be concluded that the combined operation had fallen into desuetude, and yet I venture to think it really is the method most in use. Be this as it may, I am myself so content with the combined method that I have not yet been induced to abandon it, and I wish now to show why my allegiance has remained unshaken.

The series (see table at end of paper) of 100 consecutive extractions of uncomplicated senile cataracts, which I now report, is directly continuous with a series of 100 operations by the same method, which I reported to the surgical section of the Royal Academy of Medicine in Ireland on the 21st February, 1890.

During the period which the present series covers I operated on thirty other eyes for cataract. These were cases of complicated senile cataracts, traumatic cataracts, zonular cataracts, and one case operated on by another method (preliminary iridectomy). I have not included these cases in the series of 100, because to do so would

obviously detract from the value of the conclusions to be drawn from the statistics. The question we want to answer is, what is the best operation with which to restore good and permanent sight to the greatest number of people afflicted with cataract? How many cases must we operate on in which it is impossible that any operation could restore good vision! as, for example, cases complicated with central senile chorioiditis, some cases with detached retina, some with nebulous cornea, and so on. If we include these, and such like cases in the statistics of cataract operations, we vitiate those statistics, to the detriment of the operation which may be on its trial. We may, for instance, perform an operation on an eye with central senile chorioiditis which, in respect of operation and healing process, is absolutely faultless, and yet, by reason of the chorioidal disease, the resulting vision enables the case to be classed as a partial success only. Again, in traumatic cataracts, the traumatism often extends to other parts of the eye than the lens, and this is liable to militate against the success of any operation for the extraction of the cataract, by reducing the vision obtained, or by promoting inflammatory reaction during the healing process. This series, in short, includes extractions done by this one method alone on uncomplicated senile cataracts, or on those with slight complications (*e. g.* very slight corneal nebulae or slight opacities in the vitreous humour), which would not of themselves materially interfere with vision.

But, while it would not be right to include in this series the classes of cases referred to, I shall append them to this paper in a separate table, so that there may be no misapprehension in respect of them.

Now as regards the vision obtained in this series of 100 cases, it was as follows:

In 11 $\frac{6}{8}$.	In 37 $\frac{6}{18}$.	In 2 $\frac{6}{60}$.	In 1 $\frac{2}{60}$.
In 12 $\frac{6}{9}$.	In 6 $\frac{6}{24}$.	In 1 $\frac{4}{60}$.	In 3 P. L.
In 21 $\frac{6}{12}$.	In 6 $\frac{6}{36}$.		

Reckoning, as Prof. Knapp and others do, V. of $\frac{6}{60}$

and more as good results, V. of $\frac{1}{60}$ to $\frac{6}{60}$ as partial results, and P. L. as failure, there have been in this series 95 good results, two partial results, and three failures.

As regards the three failures, the first (No. 15) was due to iritis following on an operation rendered difficult from the indocility of the patient; hæmorrhage in the anterior chamber occurred, and finally the cataract had to be delivered with the vectis, but without loss of vitreous: iritis supervened, and caused a closed pupil. The second failure (No. 88) was in an eye in which the delivery was difficult owing to the large size of the lens: it would have been better to have enlarged the incision: severe plastic iritis ensued. The third failure (No. 94) was in an eye in which a normal operation was performed, but iritis came on: two months later V. was $\frac{6}{36}$, a good result, but the pupil was small and somewhat occluded with capsule. I then performed a capsulotomy, but, owing to the smallness of the pupil, the result was negative. About three weeks later I did an iridotomy which included the capsule: no inflammatory reaction followed immediately on this operation, but about fourteen days later irido-cyclitis came on, and vision was reduced to P. L. I regret I was not content with the $\frac{6}{36}$ first obtained, or that I did not postpone the secondary operations to a much later period.

In respect of the two partial results, the first (No. 10) is noted as being discharged with "much capsule, to return," but the patient has not been seen since. Probably a capsulotomy here would elevate the case amongst the good results. The second partial result (No. 89) was an eye in which there were slight cortical remains left. Five weeks later a capsulotomy was performed, and this was followed by much irritation, with high tension for ten days. A week after this had subsided, a second capsulotomy was made, the opening produced by the first being unsatisfactory, and this again was followed by high tension, with cloudy aqueous, pericorneal injection, and pain. The patient was discharged a fortnight later, the eye being

quiet. Here, too, I believe I hurried with the secondary operations too much.

As regards the good results, the vision noted is that taken when the patient was last seen. This was very often within a month after the extraction had been performed, and, in that circumstance, it is, I think, satisfactory to find that eighty-one cases obtained a visual acuity of $\frac{6}{18}$ or more, the remaining fourteen cases obtaining from $\frac{6}{60}$ to $\frac{6}{24}$.

The cataracts were all either ripe or nearly ripe. I do not operate on half-ripe cataracts; yet by maturity I do not mean, in every case, complete opacity.

The accidents which occurred during the operation were few. Loss of vitreous humour occurred only twice (Nos. 21 and 45), and that in small quantity. Once (No. 41) the vitreous humour presented in the wound, but returned without loss. In two instances (Nos. 35 and 46) the sphincter iridis was not included in the iridectomy. In one of these cases (No. 35) it was afterwards seized with the forceps and excised; in the other it was left standing. The event is one of no importance.

Hæmorrhage into the anterior chamber to such an extent as to interfere materially with the operation or healing process took place three times (Nos. 15, 52, and 76). In one of these cases it is noted as occurring after the iridectomy; its source in the other two cases is not noted. But there was slight hæmorrhage into the anterior chamber in a good many other cases, of which no note was made, as it was insignificant in amount. Yet, it must be admitted, that even a slight bleeding into the anterior chamber renders the division of the capsule a more difficult step than it otherwise is. It seems to be very generally accepted that the source of the bleeding in this operation is always the iris, and this is put forward as a disadvantage of the combined method. But that is not my experience. I find that in a very few cases bleeding from the iris does take place, but that by far its most common source is the corneal limbus.

Once, in its passage across the anterior chamber, the

point of the knife became engaged in the iris, but was immediately disengaged without further trouble.

The section was made slightly too short in four cases (Nos. 59, 76, 88, and 96). In two of these (Nos. 59 and 96) it was extended with the aid of scissors; in the two other cases this was not done. Of the two cases in which the wound was extended, the healing process in one (No. 59) proceeded normally, while in the other (No. 96) there was slight inflammatory reaction of the uveal tract, although not any recognisable iritis. Of the two cases in which the wound was not enlarged, the healing process in one (No. 76) was normal, but in the other (No. 88) severe plastic iritis came on, resulting in a closed pupil—and this was one of the failures.

Some cortex was left behind twenty-seven times, but, except in three cases (Nos. 12, 24, and 34), it was quite insignificant in amount, and carried with it no unpleasant consequences for the eye. In one (No. 12) of these three cases high tension came on about four weeks later, necessitating a linear incision in the upper part of the cornea, through which much cortex was evacuated. The case then went on smoothly, and obtained $\frac{6}{18}$ of vision. In the second case (No. 24) a discission of the cortical remains was practised twelve days after the extraction, and the patient was ultimately discharged with $\frac{6}{24}$ of vision. In the third case (No. 34) the cortical remains in swelling pushed the iris forwards, and occasioned much irritation, which required leeching about the twelfth day. All the cortex was absorbed by the twenty-first day, and the vision obtained was $\frac{6}{8}$.

A curious complication, if I may so term it, of the operation was experienced in two (Nos. 13 and 91) of the series, namely, reflex vomiting. The patients were women, one fifty, the other sixty-three years of age. They were both very docile, and were not apparently excited or anxious about their operations. In one of the cases (No. 13) the vomiting continued for some hours after the patient got to bed, and caused an irregularity in the heal-

ing process which I shall refer to presently. In the other case (No. 91) no harm resulted. This concludes the list of accidents, irregularities, and complications of the operation which occurred in this 100 cases.

And now, in respect of the healing process. There was not a single case of suppuration. My aseptic measures or antiseptic precautions, whichever they may best be called, are as follows :—The patient's face is washed with hot water and soap just before the operation. After he is on the couch, and the eye has been cocaineized, I evert the lids, and wash and wipe out the conjunctival sac with a bit of lint previously boiled in sublimate lotion, 1 in 10,000, and now wet with the same lotion. Special attention is paid in the wiping and washing to the upper and lower conjunctival fornix, and to the inner canthus. Then the outside of the lids, and particularly their margins and the eyelashes, are wiped and washed with the sublimate lotion. This lotion, too, is employed all through the operation, with boiled morsels of lint for wiping away coagula and débris. The instruments are boiled for several minutes before use, and then laid in a bath of solution of hydronaphthol, 1 in 1200, out of which I take them for use. The blade alone of the knife is plunged in boiling water for a minute or two, as the handle is of ivory. The dressing consists of a bit of lint next the eye, and over this a layer of absorbent cotton wool. Both lint and wool have been boiled in the sublimate lotion, and are wet with it when laid on the eye. Over them is placed a piece of oiled-silk protective, large enough to extend half an inch beyond the dressing all round. This serves to keep the dressings moist, and, as I think, to retain their antiseptic qualities. The dressings are kept in their place by means of a roller bandage which goes three times across the eye. The bandage is, of course, clean; but it has not been subjected to any sterilising process. All eye-drops are made with sublimate solution, 1 in 10,000, but are not further sterilised. I am aware that many surgeons adopt much more elaborate precautions than

these, and it is no doubt better to do more than enough in this direction, rather than to fall short of what is necessary. It would seem, however, that the measures I have used are sufficient.

As regards iritis. I have not noted the number of cases in which there were some adhesions between the iris and the capsule, for of course such adhesions are of no consequence. More or less serious plastic iritis occurred in six cases (Nos. 15, 18, 52, 88, 90, and 94). In three of these (Nos. 18, 90, and 94) the operation was normal; and of these three, two (Nos. 18 and 90) obtained good vision after capsulotomy; while in the third case (No. 94), one of the three failures, a closed pupil resulted. In the three cases of iritis in which the operation had not been normal (Nos. 52 and 88), the irregularity consisted in one case (No. 52) in the leaving in the anterior chamber of some blood, which could not be got away. Here a closed pupil resulted, but, by means of an iridotomy, good vision was procured. In the second case (No. 88) the irregularity in the operation was a too short incision: a closed pupil resulted, and the patient obtained only P. L. This was another of the three failures. In the third case (No. 15) the cataract had to be delivered with the vectis, and the patient obtained only P. L. This, too, was one of the three failures.

Striped keratitis is noted six times (Nos. 20, 39, 41, 45, 51, and 99), but I believe it occurred to a slight degree somewhat oftener. In all of these cases good vision was obtained. Yet I can recall one case, not in this series, in which a permanent leucomatous opacity of the true cornea was left. In that instance there had been a mistake about the sublimate lotion, and I blamed the too great strength of it for the unfortunate result. In one of these cases (No. 20), too, I believe a mistake of a similar kind was made, a solution of 1 in 2500 being given to me; but the keratitis in this instance passed off without harm to the cornea. In the severest case of the kind (No. 99) in this series I had dropped in cocaine, contrary to my custom, in the

course of the operation, to enable the patient to look down. I cannot help thinking that cocaine, when used in this way, has an influence in the production of striped keratitis; at least, at one time I thought I noticed a coincidence between these two. We know that cocaine can alter the epithelium of the anterior surface of the cornea; and that it should be able to injure the more delicate endothelium of the posterior surface, when it happens to get access to it, need not cause surprise. The point is one upon which it would be worth while to make some experiments. In four of these six cases the operation itself may be said to have been normal, and it is remarkable that of the two in which there was an irregularity vitreous humour presented in one (No. 41) and prolapsed in the other (No. 45), yet I do not believe this had anything to do with the production of the keratitis. This phenomenon used to be seen now and then before the introduction of cocaine or of antiseptics, but I feel sure it is very much more common since then.

Prolapse with incarceration of the iris occurred only once (No. 13) in these 100 cases, and that was in a woman who vomited while on the operating couch, and for some hours afterwards. One pillar of the coloboma constantly returned to the incision as often as I reduced it into the anterior chamber. I then instilled several drops of eserine solution, hoping the contraction of the sphincter would draw the iris out of the wound before healing set in, and this might have occurred had the vomiting ceased sooner. But, as it did not so come about, slight incarceration resulted. It would have been wiser to have cut off the prolapsed portion in the first instance.

As regards the operation itself. The incision occupies the upper third, or a little more, of the cornea, and lies just in the margin of the clear cornea.

In making the iridectomy my object is to remove the least possible amount of iris. Unfortunately I did not begin to note down the width of the coloboma until

eighteen cases had been operated on, and even in the remaining eighty-two cases its width has been taken in forty-eight cases only: in the others it was forgotten to be measured. The average width of the coloboma in these forty-eight cases was 3.34 mm., the widest, which occurred only once, being 3.75 mm., and the narrowest, which also occurred only once, being 1.25 mm. The coloboma is measured after the pupil has ceased to be under the influence of atropine, and the measurement is taken with a Jessop's pupilometer at the middle of the coloboma. A Liebreich's iris-forceps was used in making the one coloboma which measured only 1.25 mm., and I am sorry I did not use that forceps again, as it seems to me likely, that with it one could be more certain of seizing a very small portion of iris, than with the ordinary iris forceps. De Wecker's scissors were used, and the blades were applied to the iris at right angles to the corneal incision, so as to avoid cutting off more than what is contained in the forceps. It is my custom to have the pupil contracted with eserine before the operation commences, with the object of enabling me to seize a very small part of the iris; and I am certain that, when the iris is stretched out by reason of the myosis, it is much easier to be certain of catching a small part of it, than if it be retracted towards the periphery of the chamber, or prolapsed in the wound. Eserine is also always dropped into the eye at the conclusion of the operation, and increases the security against secondary prolapse.

My object in making the coloboma is to secure the eye against prolapse of the iris, primary or secondary, with incarceration; and this I think I am justified in concluding that it does, when, in this 100 cases, I have had only one case of primary iris prolapse with incarceration, and no case of secondary prolapse. And if it be remembered that, in this case, the unusual complication of vomiting during and after the operation was present, it may not be too much to say, that the method practically affords immunity against this accident, when it is per-

formed with a certain amount of care. In the former series of 100 cases, too, prolapse with incarceration occurred only once. I have not noted the number of instances in which a synechia between one pillar of the coloboma and the cornea took place, for I regard it as an event of no importance whatever. It certainly did not occur frequently. Yet it is not enough to form a coloboma. Great care must be taken to stroke down the iris with a spatula, so as to get each pillar of the coloboma reduced to its normal position, and this proceeding is much facilitated by the sphincter iridis being still under the influence of eserine. The drop of eserine instilled at the end of the operation still further secures the eye against iris-prolapse.

In the freedom from iris-prolapse lies the great advantage of the combined method over the simple method, although it is not its only advantage. I see that some advocates of the simple method try to minimise the importance of incarceration of the iris. They say no harm comes of it—and that may be so in some cases. But, that it is harmful in a greater or less degree in most of the cases, cannot be denied. In some instances it becomes, at a later period, the starting-point of very severe inflammatory processes, going on to destruction of the eye, or even to sympathetic ophthalmitis. In other cases, in the course of time, the pupil becomes drawn up towards the corneal cicatrix. Again, in others, irregular astigmatism is caused. And in every case a disfiguring appearance is produced. At a time when suppuration was the bugbear of the cataract operation, a percentage of from 4 per cent. to 12 per cent. of iris-prolapse, which the best operators by the simple method now have, would not have created much regret; but in these days, when we lose less than 1 per cent. by suppuration, imperfections which used to be overlooked come to be regarded as serious blots.

Professor Hirschberg says ('Centralbl. f. Augenhk.,' December, 1892), "If the surgeon cuts out a bit of iris corresponding to the centre of the incision, that bit of

iris cannot prolapse, but a neighbouring bit can do so. I do not," he says, "find iris-prolapse to occur more frequently without than with iridectomy."

Prof. Knapp says ('Trans. Amer. Ophth. Soc.,' 1891), "What was cut away could, of course, not fall out any more, but neighbouring portions of the iris did."

And Dr. Noyes says ('Trans. Amer. Ophth. Soc.,' 1891), "Cases of operation with iridectomy are accompanied by the same accident, only in them prolapse cannot affect the iris in the middle of the wound, but presents itself at its angles."

Well, I do not agree with these three distinguished surgeons. If the iridectomy is performed as I have just described, it prevents not only the small part which has been cut away from prolapsing, but also the neighbouring parts. And why is it that there is practically no danger of secondary prolapse of that part of the iris, corresponding to the wound and which has not been cut off, in an eye with a narrow coloboma, provided the iris has been well returned to the anterior chamber, and is under the influence of eserine, while, even with these latter precautions, in an eye operated on by the simple method there is considerable danger of this accident? Solely, I believe, because the coloboma acts as a way of exit for that part of the aqueous humour which forms behind the iris, as soon as the incision has closed by its first delicate union. Complete consolidation of the wound does not take place for many hours more, and during this interval a very slight thing is needed to rupture the delicate union. The aqueous humour then rushes away through the ruptured wound, that part of it which lies in the anterior part of the chamber, without probably disturbing the position of the iris at all. But it is otherwise with the aqueous which is behind the iris. When the wound is ruptured in the simple operation the aqueous from behind the iris must make its way out, if it is not to disturb the iris, by passing round through the pupila, and through a pupil, too, which is contracted by a myotic; but it is less likely to do so than to

rush directly towards the wound, and to carry the interposing iris with it. In the combined method, the aqueous from the posterior part of the chamber flows off quietly through the coloboma, without disturbing the iris, and a very narrow coloboma is sufficient for the purpose. I stated this theory of the use of the coloboma in my former paper, and I find that Prof. Fuchs also puts it forward. I therefore do not believe, with Prof. Knapp, Prof. Hirschberg, and Dr. Noyes, that it is only that part of the iris which is abscised, which is prevented from prolapsing in the combined method.

I also dissent from a view put forward by Dr. Noyes ('Journ. Amer. Med. Assoc.,' September 3rd, 1892) when he says, "Those who do an iridectomy ought to give a reason to justify it, because they mutilate the eye. . . . I am in a position to assert that the man who does an iridectomy must give a satisfactory reason for the iridectomy." Now I deny that the iridectomy is a mutilation, and I continue to hold that it is a measure which rests on a sound scientific basis, and which is calculated to ensure the safety of the eye in an important particular. Moreover, I am not of opinion that the man who does an iridectomy is called on to justify himself, any more than the man who does not do an iridectomy; but if such a justification be required, what I have put forward in the foregoing is, I venture to think, a sufficient one.

I understand that the one advantage now claimed for the simple method is the round pupil and consequent absence of disfigurement of the eye. I do not lay much store by this, for I prefer safe results to pretty results in cataract operations on persons over middle age. But, even from the æsthetic point of view, I deny that a very narrow coloboma, such as I make, is a very disfiguring thing to the eye; indeed, in many instances it is by no means easy to see that a coloboma has been made. With these small colobomata, too, the pupil reacts actively to light, and there is no dazzling.

It was at one time asserted that the simple method gave a better acuteness of vision than the combined ; but this claim seems to be now abandoned, and it gains no support from the present series of cases.

In dividing the capsule I do so freely, but I chiefly use horizontal strokes with the cystotome, to avoid, so far as possible, the pulling of tags of capsule towards the wound.

Not until after delivery of the lens are the fixation forceps and spring speculum laid aside.

Cortical remains are evacuated by means of the lid manœuvre applied from below with the tips of the first and second fingers.

The toilet of the wound includes a search for any tag of capsule which may lie in it. As the capsule is transparent, a tag of it in the wound cannot be seen, and must be felt for, if I may so speak. This is done by causing the patient to look down while the assistant raises the upper lid. The points of the iris forceps are now passed open into the wound in the space corresponding to the coloboma, then closed and drawn out a little. A tag of capsule may or may not have been caught by the forceps. If a tag be caught, it is snipped off with the Wecker's scissors. This I regard as a very important measure, and one which obviates the only serious objection that can be offered to the combined method, namely, the danger of incarceration of capsule in the wound. It is a delicate little proceeding, but I have never had any accident in performing it. Now and then one comes across patients who cannot control themselves or their eyes, and in whom the search for capsule has to be omitted. In this series of cases I found capsule in the wound eighteen times (Nos. 2, 4, 8, 23, 26, 37, 40, 42, 46, 47, 48, 55, 57, 64, 66, 72, 78, and 90). I am glad to see that Dr. Freeland Fergus ('Brit. Med. Journ.,' May 13th, 1893) has adopted this little proceeding. I can recommend it as tending to increase the number of good and permanent results.

Of secondary operations in these 100 cases there were thirty-five capsulotomies, four discissions of cortical re-

mains (Nos. 24, 58, 60, and 83), one linear incision for removal of cortical remains (No. 12), two iridotomies (Nos. 52 and 94), and two iridectomies (Nos. 60 and 96). Owing to slow healing the cautery was applied to the edges of the wound in one case (No. 14); and in one case (No. 21) where the vitreous had prolapsed a tag of it was abscised.

In the foregoing I have only set forth what seem to me to be some of the more important points connected with this operation. There is more that I might say in its favour, but this paper has already reached a length greater than I had contemplated, or than is to be desired.

No.	Name and Age.	Cataract. Eye.	Operation. Healing process.	Secondary Operation.	Final Vision, with date.	Coloboma.	Remarks.
1	Mary B. 66	L. E. Mature	1 Feb., 1889. Regular	25 Feb., 1889. Capsulotomy	16 Aug., 1889. $\frac{1}{8}$		
2	Mary A. T. 70	L. E. Mature	8 March, 1889. Small shred of capsule snipped off in the wound	5 Jan., 1889. Capsulotomy	9 Sept., 1889. $\frac{5}{8}$		
3	Mrs. C. 70	R. E. Mature	3 April, 1889. Regular.	27 April, 1889. Capsulotomy	5 Aug., 1890. $\frac{5}{8}$		
4	Eliza F. 48	R. E. Mature	12 April, 1889. Coloboma rather wider than usual; some slight flocculent cortex left; large piece of capsule snipped off in the wound		2 May, 1889. $\frac{1}{8}$		
5	Bridget H. 52	R. E. Mature	5 July, 1889. Regular	21 Aug., 1889. Capsulotomy	2 Sept., 1889. $\frac{1}{8}$		
6	John S. 54	L. E. Mature	19 July, 1889. Regular		21 Aug., 1889. $\frac{1}{8}$		
7	Ed. M. 45	R. E. Mature	26 July, 1889. Regular		16 Aug., 1889. $\frac{1}{8}$		
8	Eliza C. 50	L. E. Mature	26 July, 1889. Small shred of capsule abscised in the wound	19 Aug., 1889. Capsulotomy	13 Sep., 1889. $\frac{1}{8}$		
9	Same patient	R. E. Mature	19 Aug., 1889. Regular	9 Sept., 1889. Capsulotomy	13 Sep., 1889. $\frac{1}{8}$		
10	Bridget L. 69	R. E. Mature	19 Aug., 1889. Regular		13 Sep., 1889. Fing. 4-5 m. $\frac{1}{8}$		"Much capsule, to return" is noted, but patient did not return to hospital for dissection.
11	Mary M. 73	R. E. Mature	9 Sept., 1889. Regular		28 May, 1890. $\frac{1}{8}$		

No.	Name and Age.	Cataract. Eye.	Operation. Healing process.	Secondary Operation.	Final Vision, with date.	Coloboma.	Remarks.
12	John F. 60	R. E. Mature	11 Sept., 1889. A good deal of cortex remained 7 Oct., 1889. T. +	7 Oct., 1889. Linear incision made in upper part of cornea, through which much cortex was removed	23 Oct., 1889. $\frac{1}{8}$		
13	Margaret M. 50	R. E. Mature	25 Sept., 1889. During the operation patient vomited several times; also subsequently. Slight prolapse of iris at one corner of wound, which I thought would go back with eserine	9 Oct., 1889. Cautery to edges of wound which had not closed	25 Oct., 1889. $\frac{9}{16}$		Some slight incarceration of iris at one corner of cicatrix.
14	Thomas C. 55	R. E. Mature	27 Sept., 1889. Regular		15 Nov., 1889. $\frac{9}{16}$		
15	James T. 59	L. E. Mature	27 Sept., 1889. Patient could not look down; hæmorrhage in ant. chamb.; no pressure in the eye; finally cataract had to be removed with vectis; no vitreous lost		21 Oct., 1889. Fingers not counted		23 Oct., 1889. Discharged. Iritis—T. - L. Some cortical remains.
16	Rev. E. J. S. 70	L. E. Mature	19 Nov., 1889. Regular		3 April, 1890. $\frac{8}{16}$		
17	Captain H. 75	L. E. Mature	8 July, 1889. Regular		14 Aug., 1889. $\frac{15}{16}$		
18	Mrs. G. 66	R. E. Mature	9 Jan., 1890. Operation regular; at end of first week some iritis, which continued for 14 days	18 Feb., 1890. Capsulotomy	5 May, 1890. $\frac{1}{8}$		

19	Daniel R. 64	L. E. Mature	17 Jan., 1890. Slight cortical remains	10 Feb., 1890. Capsulotomy	24 Feb., 1890. $\frac{1}{16}$	2 mm.
20	John T. 63	R. E. Mature	24 Jan., 1890. Operation regular. At first dressing (27 Jan.) marked striped keratitis; nurse made a mistake in giving sublimate lotion of 1 in 2500, instead of 1 in 5000, for use during operation		14 Mar., 1890. $\frac{1}{16}$	
21	James M. 42	L. E. Mature	27 Jan., 1890. Intractable patient; sphincter iridis not included in the iridectomy; slight loss of vitreous at end of operation; probably some cortex left behind	7 Feb., 1890. Small tag of vitreous hanging from healed wound abscised 26 Feb., 1890. Capsulotomy	3 Mar., 1890. $\frac{1}{16}$	
22	John C. 50	R. E. Mature	7 Feb., 1890. Liebreich's forceps for iridectomy; some slight cortical remains		30 June, 1890. $\frac{3}{8}$	1.25 mm.
23	Mary Anne P. 70	R. E. Mature	5 March, 1890. Shred of capsule snapped off in the wound	19 March, 1890. Capsulotomy	24 Mar., 1890. $\frac{3}{8}$	2.5 mm.
24	Catherine M. 50	L. E. Mature	19 March, 1890. Atropine having been employed several times (reason not stated in notes) the eserine did not act well before the operation, so that iris prolapsed a little at completion of incision, making it difficult to obtain a small coloboma; much cortex was evacuated by lid manœuvre, but probably some remained	31 March, 1890. Discussion of cortical remains	25 Ap., 1890. $\frac{1}{16}$	
25	Mary D. 50	R. E. Mature	26 March, 1890. After iridectomy cocaine was instilled to enable the patient to look down; slight cortex remained		11 Ap., 1890. $\frac{1}{16}$	

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2

No.	Name and Age.	Cataract. Eye.	Operation. Healing process.	Secondary Operation.	Final Vision, with date.	Coloboma.	Remarks.
26	Margaret L. 60	R. E. Mature	2 April, 1890. Small shred of capsule snipped off in the wound		28 May, 1890. $\frac{1}{16}$	2.5 mm.	
27	Mrs. S. 57	L. E. Mature	22 May, 1890. Regular		11 June, 1890. $\frac{1}{16}$	3.5 mm.	
28	Countess of A. 81	R. E. Much clear cortex, with hard nucleus	7 June, 1890. After pillars of coloboma had been reposed, the outer one returned to wound, and was again reposed before bandage was applied		1 July, 1890. $\frac{1}{16}$	(Atrop.)	
29	Miss S. S. set. P. 59	L. E. Mature	28 June, 1890. Slight cortical remains	10 July, 1890. Capsulotomy	21 July, 1890. $\frac{1}{16}$		
30	Thomas B. 59	R. E. Mature	2 July, 1890. Regular		14 July, 1890. $\frac{1}{16}$	3 mm.	
31	Margaret W. 72	L. E. Mature	7 July, 1890. A thick patch in centre of ant. capsule removed with capsule forceps, and then capsule further freely divided with cystotome		5 Aug., 1890. $\frac{1}{16}$		
32	Edward McG. 45	L. E. Mature	14 June, 1890. Regular		14 July, 1890. $\frac{1}{16}$	3.5 mm.	
33	Richard H. 34	R. E. Soft immature	25 July, 1890. Regular		10 Aug., 1890. $\frac{1}{16}$		
34	Mr. P. C. 71	R. E. Not quite mature	29 Aug., 1890. Some cortical remains. The cortical remains pushed forwards the iris somewhat, and caused irritation which required leeching about twelfth day. All remains absorbed by twenty-first day		5 Nov., 1890. $\frac{1}{16}$	3 mm.	

35	William R. 76	L. E. Mature	5 Sept., 1890. Sphincter iridia, incompletely divided at first, was drawn out and iridectomy completed. Slight hemorrhage in ant. chamb.	22 Sept., 1890. Capsulotomy	25 Sep., 1890. $\frac{6}{37}$	2.5 mm.
36	Mary D. 50	L. E. Mature	10 Sept., 1890. Slight cortical remains		25 Sep., 1890. $\frac{6}{37}$	3 mm.
37	Ellen I. 69	R. E. Mature	12 Sept., 1890. Shallow ant. chamber. Point of knife became engaged in iris at inner side, but immediately disengaged again. Tag of capsule snipped off in the wound		5 Oct., 1890. $\frac{6}{37}$	
38	Mr. J. W. W. 65	L. E. Mature	4 Oct., 1890. Regular		1 April, 1890. $\frac{6}{37}$	2.5 mm.
39	James C. 60	R. E. Mature	8 Oct., 1890. Slight cortical remains. Striped keratitis followed, and lasted until seventh day	9 Nov., 1890. Capsulotomy	2 Nov., 1890. $\frac{6}{17}$	
40	Frederick L. 68	R. E. Mature	10 Oct., 1890. Before iridectomy iris prolapsed, probably because eserine had not had time to act. Considerable tag of capsule caught in wound and snipped off		24 Nov., 1890. $\frac{6}{37}$	3 mm.
41	James C. 60	L. E.	29 Oct., 1890. Vitreous humour presented in wound, but returned again without loss. Some striped keratitis in healing	19 Nov., 1890. Capsulotomy	24 Nov., 1890. $\frac{6}{17}$	
42	Frederick L. 68	R. E. Not quite mature	31 Oct., 1890. Patient restless; fine tag of capsule absceded in wound; a good deal of cortex removed by lid manœuvre; some cortex left		27 Dec., 1890. $\frac{6}{17}$	Slight ant. synechia of temporal side of coloboma.
43	Aletia P. 70	R. E. Mature	26 Nov., 1890. Regular		13 Dec., 1890. $\frac{6}{37}$	2 mm.
44	Patrick F. 65	R. E. Mature	15 Dec., 1890. Iridectomy made without fixation; slight cortical remains at lower part of pupil		12 Jan., 1891. $\frac{6}{17}$	Slight ant. synechia of temporal side of coloboma.

No.	Name and Age.	Cataract. Eye.	Operation. Healing process.	Secondary Operation.	Final Vision, with date.	Coleboma.	Remarks.
45	Charles C. 70	R. E. Mature	19 Dec., 1890. On completion of delivery a small bead of vitreous presented in the wound, and was snipped off. At first dressing, some striped keratitis. Patient has long been troubled with severe chronic conjunctivitis		19 Mar., 1891. $\frac{6}{30}$	3 mm.	Long convalescence, owing to delicate conjunctiva. V. would probably be better but for conjunctivitis, which still continues.
46	Francis W. 60	L. E. Mature	31 Dec., 1890. In making iridectomy sphincter iris was unintentionally left standing. Large tag of capsule snipped off in the wound	14 Jan., 1891. Capsulotomy	21 Jan., 1891. $\frac{12}{18}$	2.5 mm.	
47	Anthony H. 32	L. E. Mature	19 Jan., 1891. A tag of capsule snipped off in the wound	4 Feb., 1891. Capsulotomy	11 Feb., 1891. $\frac{12}{18}$	2.5 mm.	
48	John S. 59	R. E. Mature	4 Feb., 1891. Fine tag of capsule snipped off in the wound. Ant. chamber first formed on seventh day	1 July, 1891. Capsulotomy	6 July, 1891. $\frac{6}{18}$	2.5 mm.	
49	Lord D. 80	L. E. Mature	28 Feb., 1891. Regular		2 May, 1891. $\frac{6}{6}$	2.5 mm.	About a year subsequently this patient had some small retinal hæmorrhages, which to some extent decreased the power of vision.
50	James L. 64	R. E. Mature	16 March, 1891. Slight cortical remains	12 June, 1891. Capsulotomy	30 June, 1891. $\frac{6}{18}$	3.5 mm.	
51	Michael N. 72	L. E. Mature	15 May, 1891. Operation regular. Some striped keratitis in course of healing		29 June, 1891. $\frac{12}{18}$		

52	Michael N. 72	R. E. Mature	22 May, 1891. Slight hemorrhage left in ant. chamber; iritis subsequently came on, resulting in closed pupil	3 July, 1891. Iridectomy with Wecker's scissors	20 July, 1891. $\frac{5}{6}$	
53	Clara E. 76	R. E. Mature	5 June, 1891. Regular	Nov., 1891. Capsulotomy	17 Dec., 1891. $\frac{5}{6}$	2.5 mm.
54	Bridget K. 43	L. E. Mature	8 June, 1891. Regular	26 June, 1891. Capsulotomy	8 July, 1891. $\frac{5}{6}$	
55	Bridget C. 44	L. E. Mature	10 June, 1891. Tag of capsule snipped off in the wound. Slight cortical remains	15 Aug., 1891. Capsulotomy	23 Aug., 1891. $\frac{5}{6}$	Some opacities in vitreous humour.
56	James L. 64	L. E. Mature	17 June, 1891. Slight cortical remains	12 June, 1891. Capsulotomy	8 July, 1891. $\frac{5}{6}$	
57	John M. 77	L. E. Mor- gagnian	28 July, 1891. Large piece of capsule snipped off in the wound	21 Aug., 1891. $\frac{5}{6}$	21 Aug., 1891. $\frac{5}{6}$	
58	Thomas W. 76	R. E. Soft cortex	26 Aug., 1891. Slight cortical remains	18 Sept., 1891. Discission of cor- tical remains	5 Oct., 1891. $\frac{5}{6}$	
59	Margaret L. 60	L. E. Large dark	23 Sept., 1891. Section made too small for large lens; enlarged at each end with scissors		12 Oct., 1891. $\frac{5}{6}$	
60	Sarah M. 69	cataract R. E. Mature	25 Sept., 1891. Section slightly inside apparent corneal margin. After discission on 10 Nov., 1891, tension became high with pain, and haze of aqueous humour. Ant. chamber of normal depth. Iridectomy (see next column) was of use for some time, but + T. came on again, and on and off with pain. Eserine; warm fomentation. Ultimately the eye quieted down, and left a clear pupil and media	10 Nov., 1891. Discission of some cortical remains. 23 Nov., 1891. Iridectomy down- wards for + T. During operation some loss of vitreous	25 Mar., 1892. $\frac{5}{6}$	

No.	Name and Age.	Cataract. Eye.	Operation. Healing process.	Secondary Operation.	Final Vision, with date.	Coloboma.	Remarks.
61	William N. 65	R. E. Mature	2 Oct., 1891. Regular		12 Nov., 1891. $\frac{6}{36}$		Some nebulæ of cornea from former ulcers.
62	Mrs. C. 70	R. E. Mature	5 Oct., 1891. Operation regular. Ant. chamber did not form until sixth day		7 Nov., 1891. $\frac{6}{18}$	3.5 mm.	
63	Miss G. 57	R. E. Not quite ripe	14 Oct., 1891. Slight cortical remains		17 Oct., 1892. $\frac{6}{13}$	3.5 mm.	
64	Margaret M. 68	L. E. Mature	22 Oct., 1891. Small shred of capsule snipped off in wound		18 Nov., 1891. $\frac{6}{9}$		
65	Nicholas S. 60	R. E. Mature	9 Nov., 1891. Operation regular. Ant. chamber did not form until eighth day		1 Jan., 1892. $\frac{6}{18}$	2 mm.	
66	John H. 64	L. E. Mature	20 Nov., 1891. Small shred of capsule snipped off in wound	9 Dec., 1891. Capsulotomy	14 Dec., 1891. $\frac{6}{18}$		
67	Nicholas S. 60	L. E. Not quite ripe	11 Dec., 1891. Regular		1 Jan., 1892. $\frac{6}{18}$	3.5 mm.	
68	James O'N. 50	L. E. Mature	1 Feb., 1892. Some cortical remains left		13 May, 1893. $\frac{6}{8}$	2.5 mm.	
69	James C. 65	L. E. Mature	11 March, 1892. Unusually wide coloboma	30 March, 1892. Capsulotomy	8 April, 1892. $\frac{6}{13}$	3.75 mm.	
70	Mr. J. J. W. 72	R. E. Mature	19 March, 1892. Operation under chloroform, owing to excessive nervousness of patient, whose other eye was operated on some years ago. Capsule could not be searched for in wound owing to upturning of the eye		25 Apr., 1892. $\frac{6}{8}$	3 mm.	

71	Mary Anne D. 64	L. E. Mature	6 April, 1892. Regular		6 May, 1892. $\frac{6}{6}$	3 mm.	
72	Mary Anne D. 64	R. E. Not quite ripe	6 April, 1892. Counter-puncture in corneo-sclerotic margin. Shred of capsule snipped off in wound. Slight cortical remains	27 April, 1892. Capsulotomy	6 May, 1892. $\frac{6}{6}$	3 mm.	
73	Mary Anne D. 63	R. E. Mature	20 April, 1892. At conclusion of operation pillars of coloboma had a tendency to prolapse into wound (eserine action not strong enough?). Eserine was instilled, and a temporary bandaged applied for a quarter of an hour, after which pillars of coloboma were satisfactorily reposed with spatula		9 May, 1892. $\frac{1}{13}$	3 mm.	
74	Bridget B. 57	L. E. Mature	22 April, 1892. Pupil not contracted with eserine; probably nurse made mistake about drops. Short conjunctival flap	19 May, 1892. Capsulotomy	23 May, 1892. $\frac{1}{13}$	2.5 mm.	Some ozæna.
75	Sarah O'C. 35	R. E. Mature	27 April, 1892. Regular		15 June, 1892.		
76	Rose B. 60	L. E. Mature	4 April, 1892. A narrow, hollow-ground knife used, which did not seem to cut well. Some hemorrhage into ant. chamber after iridectomy. Delivery slightly difficult. Section a little short?	18 May, 1892. Capsulotomy	23 May, 1892. $\frac{6}{13}$	2.5 mm.	
77	Mr. J. W. W. 66	R. E. Not quite ripe	5 May, 1892. Regular		23 Aug., 1892. $\frac{6}{6}$ or more	3 mm.	Temporal pillar of coloboma a little adherent to corneal cicatrix.
78	Margaret M. 74	R. E. Mature	30 May, 1892. Small shred of capsule snipped off in wound	15 July, 1892. Capsulotomy	25 July, 1892. $\frac{1}{13}$	2 mm.	

No.	Name and Age.	Cataract. Eye.	Operation. Healing process.	Secondary Operation.	Final Vision, with date.	Coloboma.	Remarks.
79	Mr. M. W. 82	R. E. Mature	14 June, 1892. Regular		11 July, 1892. $\frac{1}{8}$	3 mm.	
80	Mary K. 70	R. E. Mature	15 June, 1892. Regular		8 July, 1892. $\frac{1}{8}$	3 mm.	
81	Bernard M. 70	R. E. Mature	24 June, 1892. Owing to restlessness of patient spatula could not be used for replacement of pillars of coloboma, nor could wound be explored for capsule		11 July, 1892. $\frac{1}{8}$ $\frac{6}{8}$	2.5 mm.	
82	Ellen M. 50	L. E. Mature	6 July, 1892. Patient very unmanageable; would look up suddenly, after speculum and fixation were removed, bringing lower lip of wound and edge of eyelid in conflict, lifting up the former. Quite impossible to repose pillars of coloboma, or to explore wound for capsule	15 Aug., 1892. Capsulotomy	24 Aug., 1892. $\frac{6}{8}$ $\frac{1}{8}$	3 mm.	
83	Hannah S. 73	L. E. Mature	27 July, 1892. Slight cortical remains	12 Aug., 1892. Dissection of cortical remains	22 Aug., 1892. $\frac{6}{8}$ $\frac{1}{8}$		Some opacities in vitreous humour.
84	Mathilda R. 50	R. E. Mature	28 Aug., 1892. Slight cortical remains	26 Sept., 1892. Capsulotomy	12 Oct., 1892. $\frac{6}{8}$ $\frac{1}{8}$		
85	Mathilda R. 50	L. E. Mature	28 Aug., 1892. Regular		12 Oct., 1892. $\frac{6}{8}$ $\frac{1}{8}$		
86	Thomas M. 52	R. E. Soft cataract	26 Sept., 1892. Slight cortical remains		20 Oct., 1892. $\frac{6}{8}$ $\frac{1}{8}$		
87	Charles M. 60	R. E. Mature	26 Oct., 1892. Slight cortical remains		25 Nov., 1892. $\frac{6}{8}$ $\frac{1}{8}$	3 mm.	

88	William D. 86	R. E. Mature	2 Nov., 1892. Some delay and difficulty in delivery, owing to large size of lens. Severe plastic iritis supervened	9 Nov., 1892. Motion of hand	Later on learned that patient died soon after leaving hospital.
89	Margaret M. 60	L. E. Mature	7 Nov., 1893. Slight cortical remains. After capsulotomy (21 Dec.) much irritation with + T. for 10 days. After second capsulotomy, too, cloudiness of aqueous, pericorneal injection, pain, and + T.	4 Feb., 1893. Fingers counted 6 m.	2.5 mm.
90	Mary R. 70	R. E. Not quite ripe	7 Nov., 1892. Small shred of capsule snipped off in wound. Some iritis followed. Sod. Salicyl. internally	8 Jan., 1893. $\frac{9}{15}$	1.5 mm.
91	Anne M. 63	L. E. Mature	7 Nov., 1892. Patient vomited during operation without apparent cause. Slight cortical remains	2 Dec., 1892. $\frac{11}{15}$	
92	Bridget Q. 46	L. E. Mature	9 Nov., 1892. Collapse of cornea after delivery	30 Nov., 1892. $\frac{11}{15}$	2.5 mm.
93	John M. 66	R. E. Mature	24 Nov., 1892. Regular	7 Dec., 1892. $\frac{11}{15}$	3 mm.
94	John K. 70	R. E. Mature	21 Dec., 1892. Operation regular, followed by some iritis. Leeching. On 13 Feb., 1893, V. = $\frac{1}{16}$. Very small pupil, with some capsule. 28 March, 1893. No inflammatory reaction followed immediately on iridectomy, but within last few days irido-cyclitis has come on	? Date Motion of hand 0.5 m.	Left hospital to re-turn in autumn. <i>Stat. pres.</i> Pupil almost closed.
95	Mrs. F. G. 67	L. E. Mature	2 Jan., 1893. Regular	23 Jan., 1893. $\frac{11}{15}$	3.5 mm.

No.	Name and Age.	Cataract. Eye.	Operation. Healing process.	Secondary Operation.	Final Vision, with date.	Coloboma.	Remarks.
96	Ellen A. 70	R. E. Mature	18 Jan., 1893. Section a little short, extended by scissors. Slight cortical remains. 25 Jan., 1893. Some injection of eyeball and periorbital pain, but no iritis 1 Feb., 1893. Regular	15 March, 1893. Iridectomy owing to small pupil with capsule	27 Mar., 1893. $\frac{6}{17}$		
97	William W. 61	R. E. Mature			6 Mar., 1893. $\frac{17}{6}$	3 mm.	
98	James F. 60	R. E. Mor- guian cataract	13 Feb., 1893. Regular		19 Mar., 1893. $\frac{6}{18}$	3 mm.	
99	Bridget M. 70	R. E. Mature	29 March, 1893. Operation difficult, owing to wilfulness of patient. 30 March. Eye dressed, as patient had disturbed dressing. Diffuse striped keratitis, which may have been caused by cocaine instilled after section was made		29 Apr., 1893. $\frac{6}{17}$	2.5 mm.	
100	Rt. Hon. W. H. F. C. 70	L. E. Not quite ripe	8 April, 1893. Some difficulty in delivery, but section large enough		5 May, 1893. $\frac{6}{18}$	8 mm.	Capsulotomy to be done after which V. will be improved.

Complicated, traumatic, and other irregular cataracts operated on during the period covered by the foregoing series.

1. Mrs. B. S—, æt. 49. R. E. Cataract complicated by almost complete posterior synechia, the result of attacks of iritis on and off for many years, often associated with low tension. October 9th, 1889, extraction. Vitreous presented in the wound; no loss of it. October 29th, 1889, V. = $\frac{6}{80}$. Opacities in vitreous humour.

2. Rev. W. K—, æt. 70. R. E. Cataract in an eye previously iridectomised for high tension. May 1st, 1889, extraction. Capsule very tough. May 21st, 1889, V. = $\frac{6}{18}$.

3. James M—, æt. 60. L. E. Cataract with thickened capsule; trembling iris; disorganised zonula. June 19th, 1889, extraction. Cataract in its capsule delivered with vectis. No loss of vitreous until attempt to replace pillars of coloboma with spatula was made, when a small bead of vitreous presented, and was abscised with the scissors. Some slight hæmorrhage in the anterior chamber. June 24th, 1889, incarcerated bead of vitreous destroyed with cantery. August 16th, 1889, opacities in vitreous humour. V. = $\frac{6}{12}$.

4. Patrick K—, æt. 32. R. E. Cataract in an eye which has been the subject of repeated attacks of iritis. June 26th, 1889, extraction. Plastic iritis again came on. V. = P. L.

5. Robert H—, æt. 50. L. E. Traumatic cataract. November 11th, 1889, extraction. November 25th, 1889, capsulotomy. December 11th, 1889, V. = $\frac{6}{18}$.

6. Kate F—, æt. 18. L. E. Cataract, subsequently ascertained to be complicated with chorioiditis at macula-lutea and opacities in vitreous humour. January 3rd, 1890, extraction. January 15th, 1890, V. = $\frac{3}{80}$. March 3rd, 1890, after a course of mercurial inunctions had been used, V. = $\frac{6}{24}$.

7. Moses T—, æt. 43. R. E. Cataract complicated with

divergent strabismus, nebulous cornea, and central chorioiditis. March 3rd, 1890, extraction. Capsulotomy difficult owing to toughness of capsule. After delivery thickened capsule in area of pupil seized with iris-forceps and drawn away. Shred of capsule in wound also abscised. No loss of vitreous. Healing went on normally until March 12th, 1890, when an old corneal cicatrix having broken down it became purulent with slight hypopyon. The ulcer was cauterised, and the anterior chamber paracentesed. April 2nd, 1890, ulcer healed and eye quiet. $V. = \frac{8}{60}$.

8. Elizabeth K—, æt. 77. R. E. Cataract in an eye which had been the subject of repeated attacks of iritis for many years. April 23rd, 1890, extraction. May 21st, 1890, $V. = \frac{1}{60}$. Vitreous full of opacities.

9. Mary M—, æt. 73. L. E. Cataract. May 30th, 1890, extraction. Slight cortical remains. June 20th, 1890, capsulotomy. July 11th, 1890, $V. = \frac{1}{60}$. Vitreous humour so opaque that fundus cannot be seen. Coloboma 2·5 mm.

10. Jane W—, æt. 50. R. E. Cataract complicated with central opacity in cornea from phlyctenular ulceration in childhood. July 9th, 1890, $V. = \frac{6}{24}$. Small iris incarceration at inner third of wound. Coloboma 3·5 mm.

11. Mrs. C—, æt. 69. L. E. Cataract complicated with central senile chorioidal atrophy. September 4th, 1890, extraction. September 27th, 1890, $V. = \frac{8}{60}$.

12. Mary F—, æt. 26. L. E. Cataract in an eye with almost complete posterior synechia. December 19th, 1890, extraction with purposely wide iridectomy. Lens in capsule removed with vectis. Some fluid vitreous followed. January 21st, 1891, $V. = \frac{6}{60}$.

13. John L—, æt. ? R. E. Traumatic cataract. March 13th, 1891, extraction. Patient restless. Considerable loss of vitreous from patient forcibly closing lids after extraction. Some cortical remains; would not allow pillars of coloboma to be reduced. Irido-cyclitis followed. March 25th, 1891, enucleation of eyeball.

14. Mrs. B. S—, æt. 50. R. E. Cataract in an eye which has been the subject of repeated attacks of iritis with low tension for many years. April 17th, 1891, extraction. Patient went home fourteen days afterwards before eye was quite white. A week later iritis came on. July 8th, 1891, patient seen for first time since she left town. Pupil now closed, but eye quiet. May 10th, 1892, iridotomy. May 17th, 1892, V. = $\frac{6}{80}$.

15. Male patient, æt. ? L. E. Cataract complicated with old irido-cyclitis. April 20th, 1891, extraction. May 20th, 1891, V. = 0.

16. John K—, æt. 39. L. E. Traumatic cataract. May 15th, 1891, extraction. Result not noted.

17. Mary H—, æt. 60. L. E. Cataract complicated with nebulous cornea. July 28th, 1891, extraction. Thickened capsule seized with capsule-forceps after delivery and drawn away. No loss of vitreous. July 14th, 1891, V. = $\frac{6}{80}$. Nebulous cornea and large posterior staphyloma.

18. Sarah M—, æt. 69. L. E. Cataract complicated with fine chorioidal changes at macula lutea. September 2nd, 1891, extraction. October 27th, 1891, V. = $\frac{1}{80}$.

19. Michael G—, æt. 67. R. E. Cataract complicated with nebulous cornea. October 28th, 1891, extraction. Large shred of capsule snapped off in wound. Slight cortical remains. December 13th, 1891, V. = $\frac{2}{80}$.

20. Edward B—, æt. 25. R. E. Old traumatic cataract. November 9th, 1891, extraction. Capsule thickened. After removal of lens it was attempted to remove part of the capsule, which was then found to be adherent to the iris at its lower part and also to the vitreous. Finally the capsule came away without injury to the iris, but bringing part of the vitreous with it, and this was cut off with the scissors. December 9th, 1891, V. = $\frac{1}{80}$. Vitreous humour very opaque.

21. James Q—, æt. 40. R. E. Traumatic cataract. November 20th, 1891, extraction. Fluid vitreous escaped

after iridectomy. Lens fell back in vitreous chamber, and was then delivered with the vectis. Loss of vitreous slight. December 4th, 1891, V. = P. L.

22. Thomas J—, æt. 42. R. E. Shrunken and adherent traumatic cataract. December 7th, 1891, extraction. Cataract drawn away with forceps. Small irido-dialysis occurred below, followed by some hæmorrhage into anterior chamber. December 21st, 1891, closed pupil, V. = 0.

23. John B—, æt. 17. R. E. Traumatic cataract. February 17th, 1892, extraction. A good deal of lens matter remained. Result not noted.

24. Anne C—, æt. 45. L. E. Traumatic cataract from injury with lance-shaped knife in course of iridectomy for glaucoma at a country hospital a little time previously. March 2nd, 1892, extraction. A large quantity of lens substance evacuated, but still much remained behind. Eye subsequently again became hard, and the cicatrix ectatic, and enucleation had to be performed.

25. Mr. F. H. T—, æt. 84. L. E. Cataract complicated by senile central choroiditis. May 6th, 1892, extraction. May 24th, 1892, V. = $\frac{2}{60}$.

26. George T—, æt. 39. L. E. Zonular cataract. June 3rd, 1892, extraction. Cortical portion clear, but it all came away. June 15th, 1892, capsulotomy. June 20th, 1892, V. = $\frac{6}{18}$.

27. John C—, æt. 66. R. E. Zonular cataract. June 27th, 1892, extraction. Incision downwards and inwards, where a coloboma was made by me in 1874. Immediately on the incision being completed the vitreous presented, and the cataract had to be extracted with the vectis, the whole of the cortical substance coming away without loss of vitreous. June 29th, 1892, suppuration of wound. August 3rd, 1892, enucleation of phthisical eyeball.

28. Daniel H—, æt. 44. R. E. Traumatic cataract. December 7th, 1892, extraction. Lens delivered with vectis. Slight loss of vitreous. December 21st,

1892, hæmorrhage in vitreous humour. January 4th, 1893, V. = $\frac{6}{38}$. Hæmorrhage absorbed.

29. Robert A—, æt. 50. L. E. Cataract complicated with cornea globosa, very deep anterior chamber, and trembling iris. April 7th, 1893, extraction. April 28th, 1893, V. = $\frac{2}{38}$. Hazy vitreous. Patient much pleased. Never had good sight.

One senile cataract operated by another method.—

30. Patrick McG—, æt. 53. L. E. Slowly progressive cataract in which artificial ripening, *i. e.* iridectomy above with subsequent direct massage of lens, was done on March 11th, 1891. May 13th, 1891, extraction. Some slight cortical remains. May 16th, 1891, slight incarceration of the iris in outer angle of wound. June 12th, 1891, V. = $\frac{6}{12}$. (June 8th, 1893.)

28.N.23.

On the combined method of ester1883

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